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II	NN NN	NN	II	DD	EE	FF
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II	NN NN	NN	IIIIII	DDDDDDDD	EEEEEEEEE	FF
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Require file for INIT utility

Version: 'V04-000'

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FACILITY: INIT Utility Structure Level 1

ABSTRACT:

This file contains definitions common to the modules that make up
the INIT utility.

ENVIRONMENT:

STARLET operating system, including privileged system services
and internal exec routines.

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AUTHOR: Andrew C. Goldstein, CREATION DATE: 9-Nov-1977 11:36

MODIFIED BY:

V03-002 STJ3088 Steven T. Jeffreys 24-Apr-1983
Add support for /[NO]ERASE and /[NO]HIGHWATER.

V03-001 MMD0118 Meg Dumont, 29-Mar-1983 0:43
Add support for new opt's fo AVR, AVL and VMS protections

V02-009 DMW0014 David Michael Walp 26-Aug-1981

Changed /ANSI to /LABEL

V02-008 ACG0210 Andrew C. Goldstein, 1-Jul-1981 19:32
 Allow INIT/STRUCTURE=1 on magtape (for MCR CLI)

V02-007 DMW0002 David Michael Walp 3-Mar-1981
 Added switch '/ANSI=VOLUME_ACCESSIBILITY:"x"' for ANSI
 magnetic tape volume label (VOL1)

V02-006 RLRDENS Robert L. Rappaport 6-Oct-1980
 Added /DENSITY=SINGLE and /DENSITY=DOUBLE support for RX02's

Previous revision history moved to [INIT.SRC]INIT.REV

Definitions of the option bits produced by the command parser.

LITERAL	SEQULST (OPT_GBL,0,1	
	,(DENSITY)	/DENSITY switch seen
	,(DENS_800.)	/DENSITY:800 switch seen
	,(SHARE.)	/SHARE switch seen
	,(GROUP.)	/GROUP switch seen
	,(SYSTEM.)	/SYSTEM switch seen
	,(EBCDIC.)	/EBCDIC switch seen
	,(VERIFIED.)	/VERIFIED switch seen
	,(READCHECK.)	/DATACHECK:READ switch seen
	,(WRITECHECK.)	/DATACHECK:WRITE switch seen
	,(BADBLOCKS.)	/BADBLOCKS switch seen
	,(PROTECTION.)	/PROTECTION switch seen
	,(FILE PROT.)	/FILE PROTECTION switch seen
	,(RECORD PROT.)	/RECORD PROTECTION switch seen
	,(OWNER DIC.)	/OWNER DIC switch seen
	,(MAXIMUM.)	/MAXIMUM switch seen
	,(CLUSTER.)	/CLUSTER switch seen
	,(HEADERS.)	/HEADERS switch seen
	,(EXTENSION.)	/EXTENSION switch seen
	,(WINDOW.)	/WINDOW switch seen
	,(ACCÉSSÉD.)	/ACCÉSSÉD switch seen
	,(INDEX_BEG.)	/INDEX:BEGINNING switch seen
	,(INDEX_MID.)	/INDEX:MIDDLE switch seen
	,(INDEX_END.)	/INDEX:END switch seen
	,(INDEX_LBN.)	/INDEX:n switch seen
	,(DEVICE.)	device name seen
	,(LABEL.)	volume label seen
	,(IS FILES11.)	volume is already Files-11
	,(OVR EXP.)	/OVERRIDE:EXPIRATION
	,(USER NAME.)	/USER NAME switch seen
	,(DIRECTORIES.)	/DIRECTORIES switch seen
	,(OVR ACC.)	/OVERRIDE:ACCESSIBILITY
	,(STRUCTURE1.)	/STRUCTURE:1 switch seen
	,(EXPNOTMT.)	switches which are defaulted true that are illegal for MT were explicitly seen
	,(DENS_1600.)	/DENSITY:1600 switch seen
	,(EXP_VER.)	explicit /VERIFIED or /NOVERIFIED seen

```

.(DENS_6250,)      ! /DENSITY:6250 switch seen
.(DENS_SING,)      ! /DENSITY:SINGLE switch seen
.(DENS_DOUB,)      ! /DENSITY:DOUBLE switch seen
.(LABEL_QUAL,)     ! /LABEL=VOLUME ACCESSIBILITY:"x"
.(VOL_OWNER,)      ! /LABEL=OWNER IDENTIFIER:"volume owner" seen
.(OVR_VOLO,)       ! /OVERRIDE=OWNER_IDENTIFIER seen
.(INTERCHG,)       ! /INTERCHANGE seen
.(ERASE,)          ! /ERASE seen
.(NOHIGHWATER,)    ! /NOHIGHWATER seen
):

```

: Masks of options legal for disk and tape.

LITERAL

DISK OPTIONS =	qualifiers legal for disk
1^OPT_DENSITY	/DENSITY switch seen
OR 1^OPT_SHARE	/SHARE switch seen
OR 1^OPT_GROUP	/GROUP switch seen
OR 1^OPT_SYSTEM	/SYSTEM switch seen
OR 1^OPT_VERIFIED	/VERIFIED switch seen
OR 1^OPT_READCHECK	/DATACHECK:READ switch seen
OR 1^OPT_WRITECHECK	/DATACHECK:WRITE switch seen
OR 1^OPT_BADBLOCKS	/BADBLOCKS switch seen
OR 1^OPT_PROTECTION	/PROTECTION switch seen
OR 1^OPT_FILE PROT	/FILE PROTECTION switch seen
OR 1^OPT_RECORD PROT	/RECORD PROTECTION switch seen
OR 1^OPT_OWNER DIC	/OWNER DIC switch seen
OR 1^OPT_MAXIMUM	/MAXIMUM switch seen
OR 1^OPT_CLUSTER	/CLUSTER switch seen
OR 1^OPT_HEADERS	/HEADERS switch seen
OR 1^OPT_EXTENSION	/EXTENSION switch seen
OR 1^OPT_WINDOW	/WINDOW switch seen
OR 1^OPT_ACCESSED	/ACCESSED switch seen
OR 1^OPT_INDEX_BEG	/INDEX:BEGINNING switch seen
OR 1^OPT_INDEX_MID	/INDEX:MIDDLE switch seen
OR 1^OPT_INDEX_END	/INDEX:END switch seen
OR 1^OPT_INDEX_LBN	/INDEX:n switch seen
OR 1^OPT_DEVICE	device name seen
OR 1^OPT_LABEL	volume label seen
OR 1^OPT_IS_FILES11	volume is already Files-11
OR 1^OPT_USER_NAME	/USER NAME switch seen
OR 1^OPT_DIRECTORIES	/DIRECTORIES switch seen
OR 1^OPT_STRUCTURE1,	/STRUCTURE:1 switch seen

DISK OPTIONS2=	
1^(OPT_EXPNOTMT -32)	illegal MT switches explicitly seen
OR 1^(OPT_EXP VER -32)	explicit /VERIFIED or /NOVERIFIED seen
OR 1^(OPT_DENS_SING-32)	/DENSITY:SINGLE switch seen
OR 1^(OPT_DENS_DOUB-32)	/DENSITY:DOUBLE switch seen
OR 1^(OPT_ERASE-32)	/ERASE seen
OR 1^(OPT_NOHIGHWATER-32),	! /NOHIGHWATER

TAPE OPTIONS =	qualifiers legal for tape
1^OPT_DENSITY	/DENSITY switch seen
OR 1^OPT_DENS_800	/DENSITY:800 switch seen

```

OR 1^OPT_EBCDIC           | /EBCDIC switch seen
OR 1^OPT_SHARE             | SET BECAUSE OF DISK DEFAULT TRUE
OR 1^OPT_VERIFIED          | SET BECAUSE DISK DEFAULT TRUE
OR 1^OPT_PROTECTION         | /PROTECTION switch seen
OR 1^OPT_OWNER_UIC          | /OWNER_UIC switch seen
OR 1^OPT_OVR_EXP            | OVERRIDE EXPIRATION DATE SEEN
OR 1^OPT_OVR_ACC             | /OVERRIDE:ACCESSIBILITY
OR 1^OPT_STRUCTURE1          | /STRUCTURE:1 switch seen
OR 1^OPT_DEVICE              | device name seen
OR 1^OPT_LABEL                | volume label seen
OR 1^OPT_IS_FILES11.        | volume is already Files-11

TAPE_OPTIONS2 =
1^(OPT_DENS_1600 - 32)    | /DENSITY:1600 switch seen
OR 1^(OPT_DENS_6250-32)     | /DENSITY:6250 switch seen
OR 1^(OPT_LABEL_QUAL-32)    | /LABEL=VOLUME_ACCESSIBILITY:"x" switch seen
OR 1^(OPT_VOL_OWNER-32)      | /LABEL=OWNER_IDENTIFIER:"volume owner" seen
OR 1^(OPT_OVR_VOL0-32)       | /OVERRIDE=OWNER_IDENTIFIER seen
OR 1^(OPT_INTERCHG-32)       | /INTERCHANGE seen
OR 1^(OPT_ERASE-32).        | /ERASE seen

LEVEL2_OPTIONS =
1^OPT_READCHECK             | options legal only on structure level 2
OR 1^OPT_WRITECHECK          | /DATACHECK:READ switch seen
OR 1^OPT_RECORD_PROT         | /DATACHECK:WRITE switch seen
OR 1^OPT_CLUSTER.            | /RECORD_PROTECTION switch seen
                           | /CLUSTER switch seen

LEVEL2_OPTIONS2 =           | second longword of above
1^(OPT_ERASE-32)             | /ERASE seen
OR 1^(OPT_NOHIGHWATER-32);   | /NOHIGHWATER

```

; Error exit macro.

MACRO

```

ERR_EXIT (CODE) =
  SIGNAL_STOP (%IF NOT %NULL (CODE) %THEN CODE %ELSE 0 %FI)
%,
ERR_MESSAGE [] =
  SIGNAL (%REMAINING)
%

```

; Macro used to signal fatal errors (internal consistency checks).

MACRO

```

BUG_CHECK (CODE, TYPE, MESSAGE) =
  BEGIN
    BUILTIN BUGW;
    EXTERNAL LITERAL %NAME('BUGS_',CODE);
    BUGW (%NAME('BUGS_',CODE) OR 4)
  END
%

```

; Macro to generate a string and descriptor.

MACRO

```
    DESCRIPTOR (STRING) =  
        UPLIT (%CHARCOUNT (STRING), UPLIT BYTE (STRING))%;
```

```
! MACRO TO CALL THE CHANGE MODE TO KERNEL SYSTEM SERVICE.  
! MACRO CALL FORMAT IF "KERNEL_CALL(ROUTINE, ARG1, ARG2, ...)".
```

MACRO

```
    KERNEL_CALL(R) =  
        BEGIN  
            EXTERNAL ROUTINE SYSSCMKRNL : ADDRESSING_MODE(ABSOLUTE);  
            BUILTIN SP;  
            SYSSCMKRNL (R, .SP, %LENGTH -1  
                        %IF %LENGTH GTR 1 %THEN, %REMAINING %FI)  
        END%;
```

```
! MACRO TO CALL THE CHANGE MODE TO EXEC SYSTEM SERVICE.  
! MACRO CALL FORMAT IF "EXEC_CALL(ROUTINE, ARG1, ARG2, ...)".
```

MACRO

```
    EXEC_CALL(R) =  
        BEGIN  
            EXTERNAL ROUTINE SYSSCMEXEC : ADDRESSING_MODE(ABSOLUTE);  
            BUILTIN SP;  
            SYSSCMEXEC (R, .SP, %LENGTH -1  
                        %IF %LENGTH GTR 1 %THEN, %REMAINING %FI)  
        END%;
```

```
! Macro to declare parameter list for TPARSE action routines.
```

MACRO

```
    TPARSE_ARGS (NAME) =  
        BUILTIN AP;  
        BIND NAME = AP : REF BBLOCK;  
        %;
```

```
! Structure of bad block table entry.
```

MACRO

```
    BAD_LBN      = 0, 0, 32, 0%; ! bad block start LBN  
    BAD_SECTOR   = 0, 0, 8, 0%; ! bad block sector number  
    BAD_TRACK    = 1, 0, 8, 0%; ! bad block track number  
    BAD_CYLINDER = 2, 0, 16, 0%; ! bad block cylinder number  
    BAD_COUNT    = 4, 0, 16, 0%; ! number of blocks in bad section  
    BAD_STC_FORM = 6, 0, 1, 0%; ! set if sector, track, cylinder format
```

LITERAL

```
    BAD_LENGTH    = 8;           ! length of bad block table entry
```

```
! Structure for all MDL defined blocks.
```

STRUCTURE

```
    BBLOCK [O, P, S, E; N] =  
        [N]  
        (BBLOCK+O)<P,S,E>,
```

```
BBLOCKVECTOR [I, O, P, S, E; N, BS] =  
[N*BS]  
((BBLOCKVECTOR+I*BS)+O)<P,S,E>;
```

```
; Cleanup action flags.
```

```
LITERAL CLF_CLEARVALID = 1;           ! clear software volume valid on error
```

0186 AH-BT13A-SE
VAX/VMS V4.0

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